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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,566	10/23/2003	Gopal S. Revankar	007300-084	5983
21839	7590	06/30/2005	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			ZIMMERMAN, JOHN J	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/690,566

Applicant(s)

REVANKAR ET AL.

Examiner

John J. Zimmerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 11-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20031023</u> . | 6) <input type="checkbox"/> Other: ____  |

## FIRST OFFICE ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-10, drawn to a coated sprocket, classified in class 428, subclass 679.
  - II. Claims 11-31, drawn to a method of coating a sprocket, classified in class 427, subclass 191.
2. The inventions are distinct, each from the other because of the following reasons:
3. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as applying the coating by a method that does not require fusing (e.g. by electroless plating, electroplating, vapor deposition, etc. . . ).

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4. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Jeffrey Killian (Reg. No. 50,891) on June 24, 2005 a provisional election was made with oral traverse to prosecute the invention of Group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-31 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### ***Information Disclosure Statement***

7. The "FIRST INFORMATION DISCLOSURE STATEMENT" received December 23, 2003 has been considered. An initialed form PTO-1449 is enclosed with this First Office Action.

#### ***Drawings***

8. There is no objection to the drawings filed with this application.

***Double Patenting***

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6, 26-31 and 34 of copending U.S. Patent Application Serial No. 10/090,617 in view of Amano (U.S. Patent 6,414,258). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims to the copending application are drawn to a track pin bushing with a wear-resistant coating comprising an alloy comprising at least 60 weight % iron, cobalt, nickel or alloys thereof and the claims of the pending application are drawn to a sprocket with a wear-resistant coating comprising an alloy comprising at least 60 weight % iron, cobalt, nickel or alloys thereof. As evidenced by Amano (e.g. see first paragraph of column 1; Figure 37), applying hard coatings to both the bushings and the sprockets of endless track drive mechanism is conventional in the art since sprocket gear wheels contact track bushings in endless track drive mechanisms. It would have been obvious to one of ordinary skill in the art at the time the invention was made that both the sprockets and the track bushings of an endless track drive

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mechanism should be surfaced with of hard materials having compatible wear properties so that neither the track bushing nor the sprocket limit the service life of the endless track drive mechanism. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

*Claim Rejections - 35 USC § 102*

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-4, 6 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Amano (U.S. Patent 6,414,258).

13. Amano discloses applying a hard overlay coating to the teeth of a sprocket made of steel (e.g. see steel base material composition in Table 1; Figure 3). The overlay coating is applied using a weld wire (e.g. KC-50 - a mild steel) and includes wear resistant particles (e.g. see column 14, lines 17-38). The articles can be subjected to induction hardening (e.g. see column 10, lines 30-36) and the sprocket appears to be arcuate segments (e.g. see Figure 1).

14. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Crain (U.S. Patent 5,425,222).

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15. Crain discloses nickel plated steel sprockets (e.g. see column 5, lines 5-11).
16. Claims 1-2 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Revankar (U.S. Patent 5,879,743).
17. Revankar discloses hardfacing steel surfaces (e.g. see column 6, lines 46-50) with wear-resistant coatings comprising an alloy comprising at least 60 weight % iron, cobalt, nickel (e.g. see column 6, last paragraph; see Table 1). In the first embodiment, coatings having a thickness of about 0.75 mm can be formed (e.g. column 4, line 35) while thicker coating are disclosed in alternate embodiments. The substrates can be heat treated according to conventional procedures (e.g. see paragraph spanning columns 5 and 6). Revankar discloses that gears would be suitable articles for his hardfacing compositions (e.g. see column 5, lines 25-40). In view of the fact that a toothed gear and a toothed sprocket can be the same configuration, there is no difference between a generic gear and a generic sprocket.

***Claim Rejections - 35 USC § 103***

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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19. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amano (U.S. Patent 6,414,258) in view of Heaslet (U.S. Patent 2,271,172).

20. Amano as applied above to claims 1-4, 6 and 8-10 is described above. Amano may differ from claim 5 in that Amano may not require that the weld overlay coating have a thickness of 1-2 mm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the thickness of the weld overlay for the expected wear conditions of any particular sprocket because thicker overlays can be less economical. Amano may differ from claim 7 in that Amano may not require a one-piece ring. Heaslet, however, shows that one-piece sprockets are considered a conventional configuration in the prior art (e.g. see Figures 1 and 3). In view of Heaslet, it would have been obvious to one of ordinary skill in the art to apply the overlay coatings of Amano to one-pieces sprockets because this is a conventional sprocket form.

21. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Revankar (U.S. Patent 5,879,743) in view of applicant's disclosure of the prior art or Amano (U.S. Patent 6,414,258).

22. Revankar discloses hardfacing steel surfaces (e.g. see column 6, lines 46-50) with wear-resistant coatings comprising an alloy comprising at least 60 weight % iron, cobalt, nickel (e.g. see column 6, last paragraph; see Table 1). In the first embodiment, coatings having a thickness of about 0.75 mm can be formed (e.g. column 4, line 35) while thicker coating are discloses in



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alternate embodiments. The substrates can be heat treated according to conventional procedures (e.g. see paragraph spanning columns 5 and 6). Revankar may differ from the claims in that Revankar may not specifically describe sprockets as item subject to his hardfacing compositions. Revankar, however, does disclose various types of machine parts, including gears, that would be suitable for his hardfacing compositions (e.g. see column 5, lines 25-40). In view of Revankar's specific disclosure of gears, the applicability of Revankar's coatings to toothed machinery parts would be understood by one of ordinary skill in the art. In addition, applicant discloses that hardened surfaces are typically applied to sprockets in the prior art (e.g. see Background of the Invention; pages 1-4). Amano (e.g. column 1, first paragraph) further confirms that it is conventional to hardface sprockets in the prior art. In view of applicant's disclosure of the prior art and Amano, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Revankar's hardfacing coatings on sprockets because Revankar clearly discloses that these coatings can be used on any machine parts and sprockets have been shown to be prime candidates for wear resistant hard coatings. Regarding the use of applicant's disclosure of the prior art in this rejection, it is axiomatic that consideration of the prior art cited by the examiner must, of necessity, include consideration of the admitted state of the art found in applicant's specification, *In re Davis*, 305 F.2d 501, 134 USPQ 256 (CCPA 1962); *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986). Admitted knowledge in the prior art may be used in determining patentability of the claimed subject matter, *In re Nomiya*, 509 F.2d 566, 184 USPQ 607 (CCPA 1975).

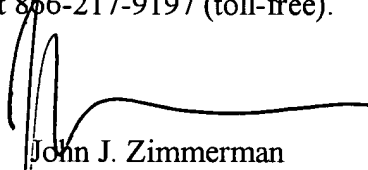
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***Conclusion***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additionally cited references serve to further establish the level of ordinary skill in the art. Miyauchi (U.S. Patent 4,851,267) discloses slurry coating gears (e.g. see Figure 1 and claims 1-6). Mosser (U.S. Patent 4,793,968) discloses slurry coating gears (e.g. see claims 1-25). Kubota (U.S. Patent 5,556,078) discloses nickel plated gears (e.g. see column 11, lines 20-27). Morris (U.S. Patent 4,895,310) discloses nickel plated sprockets (e.g. column 3, lines 12 and 37). Bergmann (U.S. Patent 4,946,747) discloses prior art nickel plated gears (e.g. see column 1, lines 48-52). Dosaka (U.S. Patent 5,897,968) discloses coated gears (e.g. see Figure 25).

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John J. Zimmerman  
Primary Examiner  
Art Unit 1775

jjz  
June 24, 2005